

REMARKS

The Official Action dated January 4, 2006 has been received and its contents carefully noted. In view thereof, claims 2-4, 7 and 9 have been canceled and claims 1, 6 and 8 have been amended in order to better define that which Applicant regards as the invention. Accordingly, claims 1, 5, 6 8 and 10 are presently pending in the instant application.

Initially, with reference to page 2 of the Office Action, the Examiner notes receipt of the papers filed under 35 U.S.C. §119 (a)-(d) based on an application filed on April 7, 2004. The Examiner states that Applicant has not complied with the requirements of 37 C.F.R. §1.63(c), since the oath, declaration or Application Data Sheet does not acknowledge the filing of any foreign application. The Examiner goes on to state that a new oath, declaration or Application Data Sheet is required in the body of which the present application should be identified by application number and filing date. In this regard, filed with the original filing of the above-noted application on October 31, 2003 was an Application Data Sheet which clearly indicates Applicant's foreign priority claim in Japanese Patent Application No. 2002-319407 filed November 1, 2002 in the Japanese Patent Office. Additionally, accompanying the original filing of the application was Applicant's Claimed for Convention Priority setting forth Applicant's priority claim under 35 U.S.C. §119. Further, in Applicant's response to the Notice to File Missing Parts of a Nonprovisional Application submitted April 5, 2004, Applicant submitted a declaration under 37 C.F.R. §1.63 identifying the above-noted application as well as a second Application Data Sheet identifying Applicant's claim for priority in Japanese Patent Application No. 2002-319407 filed November 1, 2002. Accordingly, it is respectfully submitted that Applicant has properly complied with the requirements of 37 C.F.R. 1.63(c).

With respect to the patent copy provided on October 31, 2003 as not having a ribbon properly attached thereto, it is noted that in accordance with Applicant's records, the document submitted by Applicant on October 31, 2003 did, in fact, include a ribbon properly attached thereto. Should this not be the case, the Examiner invited to contact counsel to arrange the filing of a replacement certified copy of a priority document.

With reference now to paragraph 5 of the Office Action, claims 1-7 and 10 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,227,432 issued to Enomoto et al. in view of U.S. Patent No. 4,252,587 issued to Harden et al. This rejection is respectfully traversed in that the combination proposed by the Examiner neither discloses nor suggests that which is presently set forth by Applicant's claimed invention.

With the foregoing amendments, independent claim 1 recites a friction agitation processing method of processing a workpiece by penetrating a rotating processing tool into the workpiece and removing the rotating processing tool from the workpiece after completion of friction agitation processing with the processing method comprising the steps of mounting a processing tool to an automatic machine for putting said processing tool in position with respect to the workpiece, providing an emergency stop demand signal for demanding a stop of said processing tool in an emergency, stopping said automatic machine and said processing tool immediately upon appearance of said emergency stop demand signal while the friction agitation processing is unexecuted, removing said processing tool from the workpiece after finishing scheduled friction agitation processing within a predetermined period of time from the appearance of the emergency stop demand signal while the friction agitation processing is executed and stopping rotation of the processing tool after an operation of said automatic machine subsequent to a lapse of said predetermined period of time. That is, in accordance with Applicant's claimed invention, the processing tool and the automatic machine, that

being the tool handling machine are stopped independently upon an appearance of an emergency stop signal while the friction agitation process is not being executed and, after a lapse of a predetermined period of time after removal of the processing tool from the workpiece subsequent to finishing a scheduled friction agitation processing within the predetermined period of time upon appearance of an emergency stop signal while the friction agitation processing is being executed.

Similarly, independent claim 6 recites a friction agitation processing apparatus for processing a workpiece comprising an automatic machine for holding a processing tool thereto and putting said processing tool in position with respect to the workpiece, an emergency stop means for providing an emergency stop demand signal for demanding a stop of the processing tool in an emergency, execution detection means for detecting execution of the friction agitation process by the processing tool, a timing means for stopping rotation of the processing tool after a lapse of a predetermined period of time from appearance of said emergency stop demand signal and a stop control means for stopping rotation of the processing tool and the automatic machine immediately upon appearance of said emergency stop demand signal from said emergency stop means when said execution detection means detects unexecution of the friction agitation process and finishing scheduled agitation processing within a predetermined period of time and subsequently stopping rotation of the processing tool and operation of the automatic machine, after removal of said processing tool from the workpiece upon appearance of the emergency stop demand signal from said emergency stop means when said execution detection means detects execution of the friction agitation processing.

That is, in accordance with Applicant's claimed invention the friction agitation processing apparatus and method does not interrupt the friction agitation processing which is

in process even upon an appearance of an emergency stop signal. This prevents the processing tool and the workpiece from being damaged due to an emergency shutdown of the processing. With respect to the teachings of Enomoto et al., this reference discloses a rotating agitating tool being used and pushed into a workpiece or workpieces to join workpieces in an abutted state or an overlapping state using frictional heat. As understood, it is believed that the adjoining tool is removed from the workpiece after completion of the expected joining processing. However, there is no disclosure or remote suggestion with respect to measures taken for emergency purposes, nor is there any suggestion regarding the automatic machine operative to position the adjoining tool with respect to the workpiece.

In reviewing the patent to Harden et al., it is noted that this reference discloses a butt welding machine which appears to include a work-bearing mandrel 34 that is immediately stopped when an "Emerg Stop" switch on the top of the unit 80 is opened to deenergize the main relay MR. That is, when the "Emerg Stop" switch is opened, the butt welding process is immediately interrupted. Further, as is noted from the description, the device of Harden et al. includes the means that is responsive to a predetermined axial movement of the flanges 35 after they contact the ends of the sleeve 36 for instantaneous stopping of the rotation of the mandrel 34. The control apparatus includes a circuit having a normally closed contact TDR1 of a time delay pickup relay TDR in a relay circuit for controlling operation of the motor of the mandrel 34. Clearly, the patent to Harden et al. nor the combination proposed by the Examiner disclose or remotely suggest the friction agitation process as set forth in accordance with Applicant's claimed invention wherein the processing tool is stopped after a lapse of a specified period of time following the execution of an emergency stop signal. Accordingly, it is respectfully submitted that Applicant's claimed invention as set forth in independent claims

1 and 6 as well as those claims which depend therefrom, clearly distinguish over the combination proposed by the Examiner and is in proper condition for allowance.

With reference to page 5 of the Office Action, claims 8 and 9 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Enomoto et al. in view of Harden et al. as applied to claim 6 and 7 above and further in view of US 5,903,123 issued to Shimogama. This rejection is likewise respectfully traversed in that the patent to Shimogama fails to overcome the aforementioned shortcomings associated with the prior art combination proposed by the Examiner.

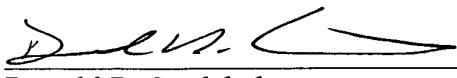
With respect to the teachings of Shimogama, it is noted that this reference discloses a robot body 1 being arranged inside a safety cage 2 having a door 5 which an operator opens to enter the safety cage 5 and that the relay CR16, is deenergized to open the relay contact 16a so as to interrupt the servo power source for a robot operation motor due to actuation of an emergency stop switch 105 by opening the door 5 or due to operation of another emergency stop switch. Clearly, this reference fails to overcome the aforementioned shortcomings associated with the combination proposed by the Examiner and particularly fails to disclose that the process is continued to run for a period of time subsequent to the detection of an emergency stop signal if the process is already in operation as is specifically recited by Applicant's claimed invention.

Accordingly, it is respectfully submitted that Applicant's claimed invention as set forth in each of independent claims 1 and 6 as well as those claims which depend therefrom clearly distinguish over the combinations proposed by the Examiner.

Therefore, in view of the foregoing it is respectfully requested that the rejections of record be reconsidered and withdrawn by the Examiner, that claims 1, 5, 6, 8 and 10 be allowed and that the application be passed to issue.

Should the Examiner believe a conference would be of benefit in expediting the prosecution of the instant application, he is hereby invited to telephone counsel to arrange such a conference.

Respectfully submitted,


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